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ABSTRACT

This paper presented the concepts underlying an evaluation model which has been developed and used for several years. The model emphasizes the synergism necessary for optimal evaluation strategies. The model is divided into four domains: (1) policy, (2) program development, (3) instruction, and (4) feedback. It is synergistic in that (1) its activities require the involvement and complete interaction among students, professional educators, and parents; (2) it requires the interaction between technical and non-technical aspects of the evaluation; and (3) its activities include both goal-based evaluation (GBE) and goal-free evaluation (GFE). (Author)

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THE SYNERGISTIC EVALUATION MODEL

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The Synergistic Evaluation Model has evolved over the last five years. It originally came into being to express the need for researchers and curriculum specialists to work together to improve services to students. As statistical techniques become more complex, and as instructional systems become more sophisticated, it is fairly apparent that few people will become experts in both areas. Yet, in order to conduct meaningful policy research that will effect decision-making by administrators, it is necessary that both of these disciplines interact.

As the model continued to be used, it became obvious that a need existed for interaction among all of the various components of the model. It is not the intent of this paper to present actual experiences using this model, but rather to provide a summary of the appropriate concepts that might be of use to other evaluators in education.

Various sections of the model have been adapted by the authors to several Michigan accountability activities, most notably objective-referenced test development, ESEA Title I evaluation and ESEA Title III Needs Assessment. The synergistic evaluation model separates an educational system into four domains: (1) policy, (2) program development, (3) instruction, and (4) feedback. Each of

these domains contain activities which are of a technical and non-technical nature wich, when combined within and between domains, form a complete evaluation model. There are three ways in which the model is synergistic: (1) its activities require the involvement and complete interaction among students, professional educators, and parents; (2) it requires the interaction between technical and non-technical aspects of evaluation; and (3) its activities include both goal based evaluation (GBE) and goal free evaluation (GFE) (Alkin, 1972). For purposes of this model, the people involved in an educational system are separated into six groups adapted from Hammond (1967): (1) students, (2) instructional staff, (3) administrative staff, (4) educational specialists, (5) family, and (6) community. The educational specialist groups consists of educators who are not directly involved in instruction or administration of the educational system (e.g., counselors, speech therapist, home-school coordinators, etc.). While the groups are inclusive of all possible persons, they clearly are not mutually exclusive (e.g., the superintendent with children in school could be classified as a member of the community, a member of the students family, or a member of the administrative staff). Input from each of the six groups must occur within each of the four domains contained in the evaluation model.

The policy domain is primarily concerned with two activities. The first activity is the establishment of the goals of an educational system. A goal is considered a broad statement of directional intent without reference to specific time or behavior (Hunter & Schooley, 1971).

In general, goals are characterized by their openness to varied interpretations. An example of an educational goal might be that all students should be able to read. The development of goals begins with focusing upon those aspects of the educational system that are considered most important by the six groups. The focusing activity is optimally carried out by a small group of individuals that represent each of the six groups of people. This group develops a list of areas of educational concern that will eventually be refined into goals. Upon compilation of such a list, a Perceived Goal Survey (PGS) (Hunter, 1969) is conducted. The PGS is conducted to give each of the areas of concern a relative ranking. When these areas are developed into goals, relative rankings can also be assigned to the goals as perceived by the broad perspective of the individuals representing the six groups of people. These rankings would then be presented for the approval of the members in each of the six groups. It is of interest to note that information derived from the PGS will be used during a later stage in the model (the process of developing external priorities).

The other primary activity within the policy domain is the development of performance objectives which accurately reflect the intent of the educational goals. A performance objective is a statement which describes the (1) individual, (2) behavior to be performed, (3) object of the behavior, (4) time reference, (5) measurement technique, and (6) criterion of success (Hunter & Schooley, 1971). Performance objectives are developed directly from goals and are not as

open to interpretation as are goals. From the prioritized goals developed from the PGS information only those performance objectives are developed for which there are adequate resources. Naturally, the first performance objectives will be of a general nature, but the development of these general performance objectives insures a close interaction between the prioritized goals and the performance objectives. In order to develop a logical progression from goals to various specific statements of behavior, it is necessary to establish a series of performance objectives that are progressively more detailed. Such conditions require a great deal of flexibility in the process used to write performance objectives. This flexibility is obtained by defining a set of descriptors for each of the six parts of a performance objective. Through the use of such descriptors, specificity of the performance objectives can be varied in a systematic manner from general to specific or in reverse.

Program development is the second domain of the synergistic evaluation model. This domain contains three parts: (1) needs assessment, (2) instructional system analysis, and (3) program modification. Based upon the performance objectives that were developed in the policy domain, a needs assessment identifies the primary needs of an educational system. The instructional system analysis determines the most likely causes of those needs. During program modification, different curricular strategies are developed to alleviate the identified differences.

A needs assessment is based upon performance objectives; in particular, it is focused on the student performance objectives. A needs assessment is conducted by using the various measurement techniques identified in part five of the definition of a performance objective. In a situation where a student does not achieve success on a realistic performance objective, a need is identified. In other words, it is not possible to identify a need until after it has been determined if the student is able to achieve the performance objective.

Any educational system posesses many performance objectives. It is probable that many needs will be identified for a given system. In actual practice, priorities are assigned to the performance objectives. There are two types of priorities. First there are internal priorities. These priorities are due to the inherent nature of the various performance objectives. For example, if the achievement of performance objective B depends upon the achievement of performance objective A, then performance objective A posesses a higher internal priority than does performance objective B. External priorities are the priorities assigned by individuals from each of the six groups. The external priorities are derived from the information obtained from the Perceived Goal Survey. Once priortities have been assigned to the performance objectives and the needs of the system have been identified, the priorities placed upon the needs follow directly.

The instructional system analysis activity is based primarily upon item analytic techniques which yield information for program modification. Consider the situation in which performance objectives reflect the intent of the goals. The instructional system is held accountable for the attainment of the performance objectives. Results of item analyses, based on needs assessment or evaluation data, assist in isolating those parts of an instructional system which require modification so as to achieve a given performance objective. Consider the classroom where p-values are obtained that ranged from .00 to .35 on items that supposedly measure performance objectives that were taught in the instructional system.

Some educators might jump to the erroneous conclusion that this information indicates that the items did not measure the performance objectives. However, in another classroom using the same basic instruction system, the p-values are quite high, i.e., .80 and above. This situation suggests that for the first classroom the implementation of that part of the instructional system to which the items apply should be changed. The second classroom may not require changes. In other situations, the instructional system may be changed. In either case, the item analytic information isolates the parts of the instructional system which requires modification.

Instruction is the third domain in the synergistic evaluation model. Program implementation and formative evaluation are the two activities within this domain. Based on the program modifications

suggested by the instructional system analysis, the new instructional system is initiated. It is expected that the modified instructional system will result in the students' attainment of the identified needs. The attainment of the needs is identical to the achievement of those performance objectives which were not accomplished during the needs assessment period. Coinciding with program implementation, formative evaluation provides information on which to base ongoing programatic decisions.

Formative evaluation provides information for two general types of decisions: (1) decisions which would modify the manner in which a planned program is being implemented, and (2) decisions which would modify the planned program itself. The information provided by the formative evaluation will be obtained from both goal oriented evaluation and goal free evaluation. The goal oriented aspect of the evaluation is concerned with achievement of the various program objectives. GFE is concerned with any additional analyses performed for serendipitous reasons in addition to those performed to determine whether the performance objectives have been obtained. These analyses are restricted by the objectives only in the sense that the data available for analysis is based on the instruments as stated in the performance objectives. In other words, statistical analyses are limited only by the appropriateness of the data.

Feedback is the fourth domain of the synergistic evaluation model. This domain is comprised of two activities: (1) summative evaluation,

and (2) recycle within the model. Summative evaluation provides information regarding the effectiveness of a total program at the end of a given period of time. Thus, summative evaluation is concerned with the overall effect of the program. As with formative evaluation, summative evaluation can be goal oriented or goal free. The recycle activity directs information obtained from the summative evaluation to those activities of the model whose decisions depend on summative information. Those summative-dependent activities are performance objectives, needs assessment, and instructional system analysis.

It is possible that the results of a summative evaluation would indicate that all identified needs had been met by the program. In such a case, it may be desirable to return to the performance objective activity and select additional performance objectives for inclusion in a new needs assessment. In the situation where only some of the identified needs have been met, information from the summative evaluation would be fed back into the instructional system analysis activity so that appropriate program modification could begin.

The complete implementation of the synergistic evaluation model could lead to the situation where the data for needs assessment activities and for summative evaluation activities would be one and the same. For example, posttest information gathered in the feedback domain could provide data for a needs assessment on the successive cycle. Since the previous example requires feedback from summative evaluation

to the needs assessment activity, a similar rationale requires a connection between formative evaluation and needs assessment.

In summary, this paper presented the concepts underlying an evaluation model which has been developed and used for several years. The model emphasizes the synergism necessary for optimal evaluation strategies. The model is divided into four domains: (1) policy, (2) program development, (3) instruction, and (4) feedback. It is synergistic in that (1) its activities require the involvement and complete interaction among students, professional educators, and parents; (2) it requires the interaction between technical and non-technical aspects of evaluation; and (3) its activities include both goal based evaluation (GBE) and goal free evaluation (GFE).

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